ABSTRACT OF THE DISCLOSURE

A cache is configured to receive direct access transactions. Each direct access transaction explicitly specifies a cache storage entry to be accessed in response to the transaction. The cache may access the cache storage entry (bypassing the normal tag comparisons and hit determination used for memory transactions) and either read the data from the cache storage entry (for read transactions) or write data from the transaction to the cache storage entry (for write transactions). The direct access transactions may, for example, be used to perform testing of the cache memory. As another example, direct access transactions may be used to perform a reset of the cache (by writing known data to each cache entry). In embodiments employing error checking and correction (ECC) mechanisms, direct access write transactions could also be used to recover from uncorrectable ECC errors, by overwriting the failing data to eliminate the errant data. In one embodiment, the cache may alter the state of its replacement policy in response to a direct access transaction explicitly specifying a particular way of the cache.